

Appl. No. 09/469,982  
Amtd. Dated October 13, 2004  
Reply to final Office action of July 13, 2004

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended): A method for a probe to negotiate a common mode of communication between two nodes, comprising:
  - a) establishing a first communication path between the probe and a first node including negotiating a mode of operation with the first node;
  - b) establishing a second communication path between the probe and a second node including negotiating a mode of operation with the second node; and
  - c) establishing controlling a plurality of switches between physical layer interfaces and repeaters using a finite state machine to establish a third communication path through the probe, ~~the third communication path coupling the first and second communication paths by establishing a point to point link between the first and second nodes in series in order to provide a negotiated common mode of operation between the first node and the second node by comparing the mode of operation with the first node and the mode of operation with the second node and selecting one of multiple communication paths through the probe as the third communication path to provide a common mode of operation between the first node and the second node, wherein the probe includes a bypass mode in which data bypasses the probe and a pass through mode in which data is monitored by the probe.~~

2-3. (Canceled)

4. (Currently amended): The method of claim 1, wherein ~~negotiating a mode of operation with the first node controlling the plurality of switches~~ comprises negotiating a speed of a transmission of data over the first communication path between the probe and the first node.

5. (Currently amended): The method of claim 1, wherein ~~negotiating a mode of operation with the first node controlling the plurality of switches~~ comprises negotiating one of half duplex and full duplex communication over the first communication path between the probe and the first node.

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6-7. (Canceled)

8. (Previously Presented): The method of claim 1, wherein the common mode of operation between the first node and the second node is the best mode of operation available between the first node and the second node.

9. (Currently amended): A probe that negotiates a common mode of communication between two nodes, comprising:

means for establishing a first communication path between the probe and a first node including negotiating a mode of operation with the first node;

means for establishing a second communication path between the probe and a second node including negotiating a mode of operation with the second node; and

means for establishing controlling a plurality of switches between physical layer interfaces and repeaters using a finite state machine to establish a third communication path through the probe, the third communication path coupling the first and second communication paths by establishing a point to point link between the first and second nodes in-series in-order to provide a negotiated common mode of operation between the first node and the second node by comparing the mode of operation with the first node and the mode of operation with the second node and selecting one of multiple communication paths through the probe as the third communication path to provide a common mode of operation between the first node and the second node, wherein the probe includes a bypass mode in which data bypasses the probe and a pass through mode in which data is monitored by the probe.

10. (Canceled)

11. (Currently amended): An article of manufacture comprising a machine readable medium having a plurality of machine readable instructions stored thereon, wherein the instructions, when executed by a processor, cause the processor to:

- a) establish a first communication path between a probe and a first node including negotiating a mode of operation with the first node;
- b) establish a second communication path between the probe and a second node including negotiating a mode of operation with the second node; and

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c) establish control a plurality of switches between physical layer interfaces and repeaters using a finite state machine to establish a third communication path through the probe, the third communication path coupling the first and second communication path by establishing a point to point link between the first and second nodes in series in order to provide a negotiated common mode of operation between the first node and the second node by comparing the mode of operation with the first node and the mode of operation with the second node and selecting one of multiple communication paths through the probe as the third communication path to provide a common mode of operation between the first node and the second node, wherein the probe includes a bypass mode in which data bypasses the probe and a pass through mode in which data is monitored by the probe.

12-13. (Canceled)

14. (Currently amended): The article of manufacture of claim 11, wherein the instructions that cause a processor when executed to negotiate a mode of operation with the first node control the plurality of switches cause the processor when executed to negotiate a speed of a transmission of data over the first communication path between the probe and the first node.

15. (Currently amended): The article of manufacture of claim 11, wherein the instructions that cause the processor when executed to negotiate a mode of operation with the first node control the plurality of switches cause the processor when executed to negotiate one of half duplex and full duplex communication over the first communication path between the probe and the first node.

16-17. (Canceled)

18. (Previously Presented): The article of manufacture of claim 11, wherein the common mode of operation between the first node and the second node is the best mode of operation available between the first node and the second node.

19. (New) A probe comprising:  
physical layer interfaces coupled to first and second nodes to establish first and second communication paths;

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a plurality of switches coupled to the physical layer interfaces and repeaters; and  
a finite state machine coupled to the physical layer interfaces to control the plurality of  
switches to establish a third communication path coupling the first and second communication  
paths through the physical layer interfaces and at least one of the repeaters, the third  
communication path providing a negotiated common mode of operation between the first node  
and the second node.

20. (New) The probe of claim 19 wherein the finite state machine asserts control signals  
to the switches and enables the repeaters to be used according to a highest common mode of  
operation between the first and second nodes.

21. (New) The probe of claim 20 wherein the highest common mode of operation is  
determined by one of a transmission speed and a duplex mode.

22. (New) The probe of claim 19 wherein the finite state machine comprises:  
an idle state upon power up;  
a first state corresponding to only one of the first and second nodes operating at a low  
transmission speed; and  
a second state corresponding to only one of the first and second nodes operating at a high  
transmission speed.

23. (New) The probe of claim 19 wherein the finite state machine comprises:  
a third state corresponding to both of the first and second nodes operating at a low  
transmission speed; and  
a fourth state corresponding to both of the first and second nodes operating at a high  
transmission speed.